

Claims

1. The use
 - 5 (i) of an alkaline medium,
 - (ii) of a first gel which comprises gelatin and phosphate ions, and
 - (iiia) of a second gel which is free of phosphate ions, the first layer of gel being covered
- 10 (iiib) of a medium containing calcium ions, for the production of a composition for the growth of apatite or/and dentine on tooth material.
- 15 2. The use as claimed in claim 1, characterized in that the alkaline medium employed is an alkaline solution or an alkaline gel.
- 20 3. The use as claimed in claim 1 or 2, characterized in that the alkaline medium has a pH of 7.1 to 14, in particular of 7.5 to 10, and preferably of 8 to 9.
- 25 4. The use as claimed in one of the preceding claims, characterized in that the alkaline medium employed is 0.05 to 1N NaOH.
5. The use as claimed in one of the preceding claims, 30 characterized in that the alkaline medium furthermore contains calcium ions.
6. The use as claimed in one of the preceding claims, 35 characterized in that the first gel employed is a gelatin-glycerol gel.
7. The use as claimed in one of the preceding claims,

characterized in that
the first gel furthermore contains fluoride ions.

8. The use as claimed in one of the preceding claims,
5 characterized in that
the first gel has a pH of 2.0 to 6.0.
9. The use as claimed in one of the preceding claims,
10 characterized in that
the first gel further comprises at least one
calcium phosphate compound.
10. The use as claimed in claim 9,
15 characterized in that
the first gel further comprises a calcium
phosphate compound selected from fluoroapatite,
monetite, brushite, amorphous calcium phosphate
and hydroxylapatite.
- 20 11. The use as claimed in claim 9 or 10,
characterized in that
the first gel further comprises fluoroapatite
particles, especially spherical fluoroapatite
particles.
- 25 12. The use as claimed in one of claims 9 to 11,
characterized in that
the first gel contains 5 to 30% by weight of
calcium phosphate compounds, especially of
30 fluoroapatite.
13. The use as claimed in one of claims 9 to 12,
35 characterized in that
the first gel contains spherical particles of
calcium phosphate compounds, especially spherical
particles of fluoroapatite.
14. The use as claimed in one of claims 9 to 13,

characterized in that the calcium phosphate compound are used as particles having an average size of 5 to 50 μm , in particular of 10 to 20 μm .

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15. The use as claimed in one of the preceding claims, characterized in that the second gel is free of fluoride ions.

10 16. The use as claimed in one of the preceding claims, characterized in that the second gel is selected from gelatin-glycerol gels, polysaccharide gels or carboxymethyl-cellulose gels.

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17. The use as claimed in one of the preceding claims, characterized in that the medium containing calcium ions employed is a solution containing calcium ions or a gel containing calcium ions.

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18. The use as claimed in claim 18, characterized in that no second gel (iiia) is employed in the case of the use of a gel containing calcium ions.

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19. The use as claimed in one of the preceding claims, characterized in that the medium containing calcium ions has a pH of 6 to 8.

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20. The use as claimed in one of the preceding claims, characterized in that the tooth material is defatted, slightly etched or/and rinsed before the application of the alkaline medium or/and before the application of the first gel.

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21. The use as claimed in one of the preceding claims, characterized in that the tooth material is human teeth or/and tooth enamel.

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22. The use as claimed in one of the preceding claims, characterized in that the components (i), (ii) and (iiia) or/and (iiib) are intended for the treatment of carious defects by remineralization.

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23. The use as claimed in one of the preceding claims, characterized in that the tooth material is covered with a dentine layer or/and a protective apatite layer.

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24. A composition, in particular for use as claimed in one of claims 1 to 12, comprising
a) an alkaline medium,
20 b) a first gel which comprises gelatin and phosphate ions, and
c1) a second gel which is free of phosphate ions, or/and
c2) a medium containing calcium ions.

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25. A kit, in particular for use as claimed in one of claims 1 to 12, comprising
a) an alkaline medium,
b) a first gel which comprises gelatin and phosphate ions,
30 c1) a second gel which is free of phosphate ions, or/and
c2) a medium containing calcium ions.

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35 26. The composition as claimed in claim 24 or the kit as claimed in claim 25, characterized in that the components a), b) or/and c1) or c2) are

furthermore defined as in one of claims 2 to 19.

27. A process for the growth of apatite on tooth material, comprising the steps

5 (i) application of an alkaline medium,
(ii) application of a first gel which comprises gelatin and phosphate ions, and
(iiia) application of a second gel, the first layer of gel being covered with this second gel and/or
10 (iiib) application of a medium containing calcium ions,

a building up of apatite on the surface of the tooth material being caused.

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28. The use

(i) of a first gel which comprises gelatin and phosphate ions, and
(iia) of a second gel which is free of phosphate ions, the first gel layer being covered with this second gel and/or
20 (iib) of a medium containing calcium ions,
for the production of a composition for the growth of apatite or/and dentine on tooth material, the first gel furthermore containing at least one calcium phosphate compound.

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